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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/387,788	09/01/1999	CHRISTER OSTBERG	040070-422	3017

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EXAMINER

WAXMAN, ANDREW

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/387,788

Applicant(s)

OSTBERG, CHRISTER

Examiner

Andrew M Waxman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 9 and 12 is/are rejected.
- 7) ☒ Claim(s) 4, 7, 8, 10, 11, 13-15 and 17-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Dahlman et al. (WO 93/00777), hereinafter referred to as Dahlman.

Regarding claim 1, Dahlman discloses an apparatus for receiving a signal (FIG. 2 '14') including a channel estimate generator (FIG. 2 '16' see page 6 lines 4-7) and a Doppler frequency estimator ('18' see page 5 and 6 lines 20-22 and 10-26 respectively).

Regarding claim 12, Dahlman further discloses the channel estimate generator configured to receive a first group of pilot symbols. See page 5 lines 16-22.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman in view of Schmidl et al. (US Patent No. 6,424,642) hereinafter referred to as Schmidl.

Regarding claims 2, 3, 5, and 6, Dahlman discloses all of the limitations as recited above with respect to claim 1 also including a subtractor to calculate the difference between two channel estimates (t_1 and t_2).

Dahlman does not disclose normalizing the two channel estimates and then calculating the difference between the two normalized channel estimates.

Schmidl discloses estimation of Doppler frequency including using normalized values in the Doppler frequency estimation. See col. 6 lines 25-26 and 43-64.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to include normalizing the values, as disclosed in Schmidl, into the invention as disclosed by Dahlman.

One of ordinary skill in the art would have been motivated to do this to facilitate optimal estimate of the Doppler frequency. See Schmidl col. 6 lines 57-61.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman in view of Kansakoski et al. (US Patent No. 6,377,813) hereinafter referred to as Kansakoski.

Regarding claim 9, Dahlman discloses all of the limitations as recited above with respect to claim 9.

Dahlman does not disclose a velocity estimator using the Doppler estimate to generate a velocity estimate.

Kansakoski discloses an apparatus including a velocity estimator. See col. 4 lines 41-42.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to include the velocity estimator, as disclosed by Kansakoski, in to the invention as disclosed by Dahlman.

One of ordinary skill in the art would have been motivated to do this to facilitate the use of a power control technique which in response to a determined velocity of a mobile station, adjusts the power level of a transmitted communication signal. See Kansakoski col. 3 lines 30-33.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman in view of Ostberg et al. (US Patent No. 6,542,562) hereinafter referred to as Ostberg.

Regarding claim 16, Dahlman discloses an apparatus for receiving a signal (FIG. 2 '14') including a channel estimate generator (FIG. 2 '16' see page 6 lines 4-7) and a Doppler frequency estimator ('18' see page 5 and 6 lines 20-22 and 10-26 respectively).

Dahlman does not disclose a plurality of fingers or a searcher.

Ostberg discloses an apparatus including a Searcher (FIG. 1) and a plurality of fingers (FIG.1).

At the time the invention was made it would have been obvious to one of ordinary skill in the art to include the searcher and plurality of fingers, as disclosed by Ostberg, in to the invention as disclosed by Dahlman.

One of ordinary skill in the art would have been motivated to do this in order to facilitate the good performance of a simple receiver when using a sufficient number of fingers and to enable the invention to be implemented on a Wideband Code Division Multiple Access network, thereby making the invention more marketable. See Ostberg col. 2 lines 23-43.

Allowable Subject Matter

Claims 4, 7, 8, 10, 11, 13-15, and 17-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Love discloses method and apparatus of adaptive maximum likelihood sequence estimation using a variable convergence step size.

Forssen discloses a method and apparatus for transmitting and receiving signals using two classes of channels.

Sandin discloses a method and apparatus for coherently-averaged power estimation.

Dettmar discloses a method for measuring frequency shift in digital communications using synchronization sequence and channel step response.

Dunn discloses a high frequency anti-jam communication system terminal.

Bottomly discloses a generalized direct update viterbi equalizer.

Kubo discloses an apparatus and method for estimating speed in mobile communications.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M Waxman whose telephone number is (703) 305-8086. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Andrew M. Waxman
June 18, 2003


HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
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